

THE BRUCE MICROTOME.*

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The Bruce microtome, designed by my friend, Prof. Alexander Bruce, of Edinburgh, and made by A. Frazer, of that city, is intended especially for cutting celloidin preparations under the surface of alcohol. Its construction is very simple. It consists of a heavy metal tank, 2 cm. deep, 20 cm. wide and 90 cm. long, inside measurements. A square middle section is 6 cm. deeper than the other portions of the tank. In the centre of the deep portion is the object-holder. Orientation is secured through a ball and socket joint, which may be clamped to any position. The object-holder is moved vertically by a large but delicate micrometer screw, moving in a heavy sleeve attached under the centre of the tank.

Automatic feeding is obtained by a system of levers put in motion by the knife-block, and acting on a ratchet-wheel on the lower extremity of the micrometer screw. The knife-block is 4 cm. in thickness and 25 cm. long. It moves in a V-shaped groove running the full length of the tank. The cutting stroke is given to the block by a weight and pulley attached to one end, and the return stroke by a treadle and pulley. Two bronze arms, which may be adjusted at any desired angle, are attached to the block and suspend the knife within the tank.

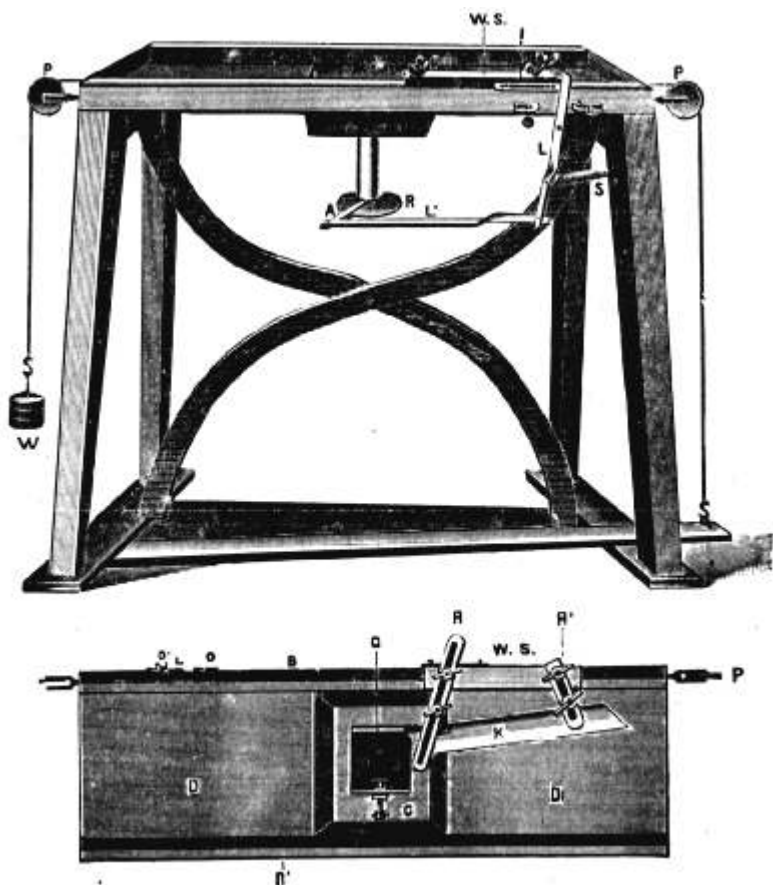
The knife is 5 cm. wide and has an effective cutting edge of 30 cm.

The whole apparatus is supported on four heavy metal legs.

In operation the knife is first adjusted; then the tank

*Read at the twenty-fourth annual meeting of the American Neurological Association, May, 1898.

is filled with 50 to 80 per cent. alcohol, sufficient to submerge the edge of the knife. From 1.5 to 2 litres of fluid are sufficient. When the block is in place and ready for cutting, the operator draws back the knife, which at the same time feeds the block upward, by a stroke of the



treadle. He removes his pressure from the treadle and the weight and pulley produce the cutting stroke. Both hands of the operator are free for handling the sections.

The good points about the instrument may be summed up as follows:

1. Its simplicity. Any intelligent person can understand it and operate it. One which has been in use two and a half years in my pathological laboratory has not once been in the least out of order.

2. Its accuracy. Exceedingly thin sections may be cut on it without "skipping." This is accomplished by the large size and rigidity of the parts preventing vibration, and by the fact that the entire block and the edge of the knife are constantly under alcohol.

3. Its capacity. While the object-holder is not sufficiently delicate in its adjustment for the finest embryological work, the largeness of the section is limited only by difficulties in embedding technique and by the width of the tank.

4. Its rapidity. The instrument is operated entirely by foot power, and both hands are free for removing the sections, which are very easily removed.

Several minor improvements might be made in the instrument at small additional expense, but even as it now stands it fulfills very perfectly all the requirements made on a celloidin microtome.

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253. SUL TIPO PROGNEO NEI SANI DI MENTE, NEGLI ALIENATI E NEI CRIMINALI (On a Type of Prognathism in Normal, Insane and Criminal Individuals). G. Peli (Archio di Psichiatria, 19, 1898, p. 611).

The author discusses the type of prognathism in which the under jaw protrudes beyond the upper and gives a statistical study of much value. He shows that this condition is found in from 2 to 3 per cent. of normal individuals. In the insane the figures of various authors are given showing a large amount of variation. Richter gives 1 per cent. and Giuffrida-Ruggeri, 44 per cent., and others give intermediate percentages between these extremes. The author's own investigations covered some six hundred observations on the insane, one hundred criminal insane and two hundred criminals. His figures are about as follows. In the insane this condition was present in 28 per cent. of the men and 15 per cent. of the women; among the criminal insane, 33 per cent. among the men, and among criminals, 38 per cent. in men and 21 per cent. in women. Among the criminals this condition was more prevalent in those who had committed grave offenses, such as murder and robbery.

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